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An historical analysis of the lexical emergence of the Big Five personality adjective descriptors [☆]

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Abstract

This study examined two questions regarding the emergence of adjectives that describe the Big Five Personality dimensions and when they emerged into the modern English lexicon: (1) Did the terms that describe these qualities appear simultaneously or sequentially? (2) Can the emergence of these terms be linked to specific historical eras? Results showed that the adjective descriptors for Openness appeared in the modern lexicon significantly later than those for Agreeableness, Extraversion, and Conscientiousness. The historical context surrounding the emergence of Openness was presented and the implications of these findings for understanding personality were discussed.

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[☆] Request reprints from Ralph L. Piedmont, Department of Pastoral Counseling, Loyola College in Maryland, 8890 McGaw Road, Suite 380, Columbia, MD 21045. Or via e-mail at: rpiedmont@loyola.edu. Portions of these data were presented at the 2002 Annual Convention of the Eastern Psychological Association in Boston, MA. Thanks are extended to Mark M. Leach, Robert R. McCrae, Rose Piedmont, and Martin F. Sherman for their comments on an earlier version of this report.

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1. Introduction

Generations of lexicographers have spent decades in a continuum of collaborative and detailed analyses to carefully document the categorizations of human interpersonal experiences. Miller (1991) made the observation: “When an idea is important, people are likely to have a word for it. Mountain people will have a word for mountain; people who live on the plains and have never seen a mountain will not have such a word. The more important something is, moreover, the more words that are likely to be” (p. 4). This idea reflects what has come to be known as the “lexical hypothesis”, and formed the underlying logic to Allport’s groundbreaking research that saw the English language as a potential source point for identifying salient individual-difference variables (Allport & Odbert, 1936). The result of this work has been the development of the Five-Factor Model of Personality (FFM; Digman, 1990).

The FFM has become one of the more widely accepted taxonomies for describing personality structure (Digman, 1990; McCrae & John, 1992; Wiggins, 1996). The value of this model has been found in its widespread usage in personality assessment (Ozer & Riese, 1994) and its importance has been extended through research documenting its cross-cultural relevance (McCrae & Allik, 2002). Behavioral genetics research has documented that between 40% and 60% of the variance of these constructs is genetically heritable (Jang, Livesly, & Vernon, 1996). As biological realities, these dimensions have important implications for understanding human behavior.

However, this genetic linkage does not imply that culture and context have no impact on how these dimensions are expressed and the adaptive function(s) they serve. There is a complex interaction between nature and nurture, and no aspect of human behavior can be understood solely in terms of just one of these perspectives. Research with the FFM has generated findings that support the hypothesis that culture can have an impact on the salience and expression of personality qualities. Four sets of findings are presented that support this hypothesis. Although alternative explanations for the findings of each study are possible (e.g., McCrae, 2004; Poortinga, van de Vijver, & van Hemert, 2002), taken as a whole these findings provide a compelling rationale supporting a cultural impact hypothesis.

First, mean level scores on the domains of the FFM vary across the globe. McCrae (2002) presented data from 36 cultures and found much variability in scores on the FFM. For example Austrian, Swiss, and Dutch samples scored the highest on Openness to Experience, whereas the Danes, Malaysians, and Telugu Indians scored the lowest. When these differences were plotted spatially, Allik and McCrae (2004) noted that systematic patterns of personality profiles emerged that corresponded to the mapping of the countries on the globe. Thus, Indonesians, Filipinos, and Malaysians occupied one quadrant whereas Czech, Germans, and Austrians were found in another. Americans, Canadians, and Hispanic Americans were found in yet another quadrant. Levels of personality differ across cultures (and geographic regions) suggesting that different adaptive pressures may stress some aspects of personality more than others. In a related study by Hofstede and McCrae (2004), they noted how FFM personality scores in these cultures were significantly related to the cultural-based dimensions of Individualism, Power Distance, Masculinity, and Uncertainty Avoidance.

Second, emic-based research examining the lexical structure of traits in various cultures has revealed that there may exist other context-specific personality dimensions not contained in the FFM (Bond, Nakazato, & Shiraiishi, 1975; Isaka, 1990; Narayanan, Menon, & Levine, 1995; Yik & Bond, 1993). These dimensions capture trait aspects that may have developed in response

to specific demands of the culture. Third, there is evidence suggesting that over time immigrant groups exhibit personality styles more consistent with their adoptive homes. McCrae, Yik, Trapnell, Bond, and Paulhus (1998) examined the personality profiles for recent Chinese immigrants to Canada with a cohort of Canadian born Chinese. Significant effects for acculturation were found: Canadian born Chinese scored higher in Extraversion, Openness, and Agreeableness than the recent immigrants.

These three sets of findings support the hypothesis that there is a dynamic interplay between personality and culture: People select/create their environments so as to provide outlets for their own motivations, and environments in turn can provide specific pathways (e.g., rituals, social conventions, moral principles) that can focus these motivations for maximum effect. However, another question emerges from these findings: “As cultures develop and change over time (either in response to specific events, like wars or natural catastrophes, or to changing motivations in people), do they create psychological pressures to which people need to adapt?” Adaptation may be in the form of certain characteristics becoming more salient or the emergence of personality qualities that may have been dormant.

This question emerged from the fourth set of findings in a study by Piedmont, Bain, McCrae, and Costa (2002) that translated the NEO PI-R into Shona, a native language of Zimbabwe. The great majority of research on the FFM has concerned itself with mostly industrialized or pre-industrial nations. Research with the Shona was one of only a very small number of studies examining the non-industrialized, agrarian cultures of sub-Saharan Africa. Although the five-factor structure could be obtained, Piedmont et al. (2002) found that it was difficult to find Shona words that represented Openness to Experience concepts. Problems in recovering Openness were found by others using different indigenous African samples (Heuchert, Parker, Stumpf, & Myburgh, 2000; Horn, 2000). This difficulty in recovering Openness cannot be due to its lack of presence. As research has shown, the construct has a substantial genetic basis and should be present in all humans. Perhaps, then, living in a traditional agrarian society, where personal options and opportunities for innovation are limited, individual differences in Openness may not be sufficiently important in daily life for the Shona to have developed a relevant vocabulary about the quality. The lack of words to define the construct would make it difficult for individuals to develop any type of self-image around Openness. Piedmont et al. considered whether the relative salience of Openness in the West is a recent response to the adaptive pressures brought about by industrialization and urbanization. The rise of a smokestack economy may have introduced sociological changes that highlighted individual differences in reactions to novelty, in distinguishing innovators from laggards, and in identifying creative potential.

If indeed culture can impact the expression of traits, then major, durable, sociological shifts in a culture should be reflected in changes in the salience of specific traits. One way to track this possibility would be to examine when various trait terms made their appearance into the lexicon. If our hypothesis that Openness was a response to industrialization were correct, then we would expect that terms capturing Openness would have emerged more recently in time than terms capturing the other personality dimensions. This is a key premise of the lexical approach, that as attributes become more important and worthy of notice, words for those qualities appear and are maintained by frequent use (Saucier & Goldberg, 2001). If this perspective were correct, then it would provide an exciting platform for understanding how personality terms may develop in relation to specific cultural movements (see McClelland, 1961).

Information about when a word appeared in the lexicon is readily available in the Oxford English Dictionary (OED), which provides historical dates for when (and where) a word was first used. This methodology can directly index when constructs became lexically formalized. Using year of entry dates from the OED, Benjafield and Muckenheim (1989) examined a sample of trait descriptors that described qualities inherent to the Interpersonal Circumplex (IC; Wiggins, 1979). (The IC is defined by the FFM personality domains of Extraversion and Agreeableness [McCrae & Costa, 1989]). They found that the broader, positive trait terms of each domain emerged earlier in language usage than the more specific, negative terms. They argued that such a lexical progression reflected a developing cognitive capacity of people to think more sophisticatedly about others.

The purpose of this study was to expand on this methodology by examining a sample of word descriptors from the English language that reflect all the FFM personality dimensions and determine: (1) if the emergence of these trait terms into the lexicon occurred simultaneously or lagged over time; and, (2) when, historically, these word descriptors made their first appearance in the English lexicon. This study sought to determine if there are significant period effects for the emergence of the FFM dimensions and if Openness did indeed represent a rather recent lexical development in personality structure.

2. Method

The etymological dates of first usage origins for 160 trait-descriptive personality adjectives were researched in this study. These descriptive adjectives were chosen from the following instrument:

The Bipolar Adjective Rating Scale (BARS). Developed by McCrae and Costa (1985), the BARS is an 80-item bipolar scale designed to capture the five major dimensions of personality: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Items for this scale were selected from the lexical analyses of Goldberg (1983) and were augmented with additional items written by McCrae and Costa. Admittedly an older measure of the FFM, research does show this scale to be a valid indicator of these five personality dimensions (McCrae & Costa, 1987; Piedmont, 1995). Of the 160 trait items in the scale, six could not be used in this study (“not impulse ridden,” “not lonely,” and “not envious” were dropped because they were only the negative counterpart of a corresponding adjective; and “prefer variety,” “narrow interests,” and “prefer routine” were excluded because they were phrases rather than a single term). For the remaining 154 adjectives, a specific *year/date-of-entry* was determined.

2.1. Procedure

The Second Edition of the *Oxford English Dictionary* (OED, 1989) and the updated CD-ROM (2000) edition/version of the OED were used to determine the earliest known instance of occurrence (date-of-entry [by year]) when each of the 154 trait descriptive adjectives entered the English lexicon. The OED is the standard source for determining the date-of-entry of a word into the English language (Benjafield & Muckenheim, 1989). Each descriptive adjective’s *year/date-of-entry* into the English lexicon was obtained from the OED to determine the word’s first usage as a *descriptor of personality or personal temperament*. These dates served as the dependent variable in this study.

The OED notes that in the light of “historical etymology,” *recent English* words (such as our adjective descriptors) are “the extant formal representative, or direct phonetic descendant, of an

earlier word” (OED, 2nd ed., p. xxvii). In light of this historical etymological reality, this study sought to carefully research each descriptor so that the earliest form of the adjective would be acknowledged where the form and spelling of the term was recognizable and closely associated with the present “formal representation” of the word. For example, “talkatyve” (1441) was chosen over the earlier usage, “talcatife” (c. 1400) by Chaucer, for the BARS descriptor, “talkative.” Doing this helps to increase confidence that both the term was being used in a connotatively similar manner as today, and that the word represents a truly English term and is not a hold-over or hybrid word from another language (e.g., Saxon, Norse). This required some subjectivity on our part and may have resulted in date of entry values that are slightly more recent. For those adjectives where the OED gave a range of entry dates, the *year/date-of-entry* value was determined to be the midpoint year in the given range. For example, the OED gives the BARS descriptor “sober” a first usage range from 1350–1390. The year “1370” was chosen for entry.

3. Results

The English language is usually divided into three periods: Old English (OE), Middle English (ME), and Modern English (Mod). Commonly accepted dates for these periods are given as: OE (<1200), ME (1200–1500), and Mod (>1500) (Benjafield, 1983). In examining the distribution of all 154-trait terms across these periods shows that the majority emerged in the Modern period ($n = 114$), with declining numbers in the ME ($n = 34$) and OE ($n = 6$) periods. Most of the terms for personality emerged rather recently ($\chi^2 [2; N = 154] = 122.39, p < .001$). This finding is consistent with Benjafield’s (1983) findings that constructs used to describe psychological events entered the English language much later than those used primarily to describe physical events.

For each personality domain, the average year in which the adjectives appeared in usage in the lexicon was obtained. The temporal appearance of the adjectives was as following: Extraversion ($M = 1542$; $SD = 248.9$; Range: 900–1967; Mode: 1550–1650), Agreeableness ($M = 1565$; $SD = 190.9$; Range: 1050–1944; Mode: 1550–1650), Conscientiousness ($M = 1614$; $SD = 224.6$; Range: 1000–1892; Mode: 1750–1850), Neuroticism ($M = 1678$; $SD = 200.7$; Range: 1300–1907; Mode: 1825–1875), and Openness ($M = 1722$; $SD = 180.2$; Range: 1340–1934; Mode: 1825–1875). Interestingly, this is the order these factors emerge in factor analysis results using adjective rating scales chosen to be representative of the English lexicon (Goldberg, 1992).

In order to determine if the “age” of these adjectives was significantly different across domains, a one-way ANOVA with five groups, representing the five personality domains was performed. An overall effect was found [$F(4,149) = 3.28, p = .013, \eta^2 = .08$], indicating significant year of appearance differences across the five personality domains. A post-hoc LSD test indicated that E and A appeared significantly earlier than N and O, while C was significantly older than O. Clearly, O seems to appear in language usage significantly later than E, A, and C¹.

¹ One reviewer noted that a disproportionate number of the terms for Openness involved words that bore the residue of their origin in the bipolar scale: terms such as “uncreative” and “uncurious” (i.e., 6 of 30 terms). These “un” words emerged later in time than the original terms. As such, it could be argued that the more recent emergence of Openness was due to an over-inclusion of these types of terms. In order to address this issue, the ANOVA was redone omitting these six terms. The results were again significant [$F(4,143) = 2.80, p < .05$], with Openness emerging significantly later (Mean Date of Entry was 1718) than Extraversion, Agreeableness, and Conscientiousness.

4. Discussion

These data raise four important points. First, the order in which these personality dimensions emerged in language corresponds to the order in which they emerge in factor analyses of adjective samples. Goldberg (1992) noted that the domains of E and A have the largest number of adjectives in the lexicon. One explanation for the over-representation of E and A trait adjectives is that they were around longer than any of the others. McCrae (1990) has also noted that Openness is the least well represented in the language and it has only recently emerged in language usage. Thus, the longer a personality trait has been present in the lexicon, the more descriptors that appear to accrue. Benjafield and Muckenheim (1989) demonstrated that the addition of new trait terms occurs systematically, with newer terms reflecting more cognitive differentiation. Thus, E and A have not only more descriptors, but are more conceptually developed and differentiated terms.

Second, these data also show that the personality dimensions did not all emerge in our language simultaneously. There are significant differences in the rise in usage of these terms with Openness being the most recent. This raises the possibility that changes in our sociological environment may help to create new adaptive pressures that our personalities need to accommodate. The average year appearance for the Openness domain is 1722, the middle of the Age of Reason, the beginnings of the industrial revolution, and the rise of modern science. These “events” placed a higher premium on creativity, flexibility, and curiosity. In comparison with Extraversion, only 6 of the 23 Openness items (26%) were in their modern form in 1650, and the largest number of Openness terms entered the lexicon during the period 1825–1875. The 19th century saw a major increase in the usage of Openness-related terms. Thus, it may be possible that the sociological demands of this new “age of science” placed on individuals an external impetus for the creation of a more sophisticated language to discuss personal qualities that were most relevant for the times. New adaptive challenges may have been emerging in society that needed to be lexically formalized. As a result, understandings of personality and temperament became more differentiated and nuanced.

Third, these findings also provide one possible explanation as to why Openness is very difficult to recover in the languages of pre-industrialized, agrarian cultures, like the Shona of Zimbabwe (Piedmont et al., 2002); who lack the contextual impetus for lexically developing Openness as a highly differentiated adaptive response. The highly structured, communal, and cyclical nature of farming limits the degree to which individuals seek to be nontraditional, creative, and independent. These findings also suggest why the personality profiles of Chinese immigrants changed over time in the direction of the normative pattern for their host country. The new culture provides a different set of adaptive challenges as well as novel ways of thinking about and describing oneself. Over time, people construe (express) their personality in ways that make sense in light of these cultural demands.

Although it was not anticipated, it is interesting to note that Neuroticism also emerged linguistically rather late; its average year of entry not being significantly different from Openness (1678 versus 1722). It may be possible that the increasing salience of these two dimensions is related. One explanation is that both constructs share a common “cause”, in that industrialization may have emphasized openness-related dispositions, but the social and personal upheavals that accompanied it (e.g., migration of people from farms to cities; the rise in urban living) induced a greater

awareness of feelings of personal vulnerability, anxiety, isolation, and emotional dysphoria. As Popovic (2002) noted, “anxiety appears when an individual faces reality without the protection of personal or social constructs, and is confronted once again with its inherent uncertainty” (p. 33). A second explanation could be that Neuroticism is a “side effect” of Openness. Greater salience in Openness supports a consideration of the abstract, nontraditional, unstructured, “what if?” qualities of life. This perspective emphasizes the transient, uncertain nature of life that induces greater feelings of anxiety. Rollo May (1950, p. 351) may have grasped this connection when he said, “personalities of higher intelligence, originality, and level of differentiation likewise have more anxiety.”

Finally, whatever the ontological links between these two dimensions may be, future research may wish to consider the ways in which cultural conditions may promote the emergence of new personality terms in language. Is it a change in people themselves that creates a need for these new terms (i.e., a critical mass of people with a common temperament emerge)? Or, is it the intrusion of external forces that change the quality of culture (e.g., economics, technology, scientific discovery) that provides the urgency for new descriptive terms? One can only wonder if our current culture is calling forth new changes in us today. To what extent has the dawn of the “Digital Age” and the use of terrorism as a political tool created new terms for characterizing people that may help to further nuance our language of “personality”? Does the biological matrix from which personality arises contain more potential personological variability than what is currently expressed phenotypically? Are the Big 5 personality dimensions only a contemporary representation of what personality is? Will there be new dimensions of personality present in our lexicon 300 years from now? Would an examination of ancient languages (e.g., Greek, Latin) provide evidence of personality descriptors that may have become “extinct” in the face of changing cultural pressures? To what extent does lexical change reflect either change in the underlying traits or just in their expression? By examining our understanding of personality within a socio-historical context, answers to these questions may provide an entirely new perspective for understanding how nature and nurture affect human behavior.

4.1. Empirical strengths, interpretive caveats and semiotic psychology

Although this study provides a very novel approach to understanding personality trait terms, it is not unique. As noted earlier, Benjafield and Muckenheim (1989) conducted a study that found year of entry values for the trait terms describing the Interpersonal Circumplex. The results of the current study replicate their findings in that those terms most related to extraversion appeared earlier than those related to agreeableness. A second point of convergence concerns the mean year of entry for Conscientiousness descriptors, which was 1614. McClelland (1961) also noted a peak level of need achievement-related imagery in English literature occurring around 1600. These points of convergence provide some assurance that the findings of this study are not atypical, random, or unique. However, there are numerous adjective measures for the Big 5 (e.g., Goldberg, 1992) that include different terms from those used here. Further, the number of adjectives for each personality domain was different, making some average date of entry estimates more precise than others. It needs to be determined if a similar pattern of findings would have emerged had a larger, more equally representative set of adjectives been used for analysis.

In examining and interpreting these findings, some consideration needs to be given to the meaning behind the date of entry (DOE) values used here. Specifically, the emergence of these trait terms did not occur in a vacuum; many of these adjectives developed out of pre-existing terms. Therefore, it should *not* be concluded that the constructs underlying the terms examined here did not exist previous to the earliest DOE value. For example, the term “nervous” emerged in the year 1340. This does not mean that people were not nervous before this time (or for that matter, that Neuroticism was not a relevant construct before 1300). In fact, this term was derived from an earlier Latin word (*nervosus*). Thus the concept of nervousness has been around for a long time, but this specific aspect of it was only formalized in *our language* during the Middle English period. Although this study cannot explain the “why” to this fact, it does call attention to the possibility that environmental forces can impact the ways in which biologically based qualities come to be expressed (or repressed) in behavior.

However, what the DOE does represent is the fact that during specific historical eras, writers were very much interested in talking about specific aspects of human personality with sufficient depth and nuance as to require the development of new terms and concepts. Whether by rediscovering older terms or by inventing new ones, writers found it important to plumb the depths of human temperament in new ways. To the extent that language and speech can be considered indices of underlying emotions and attitudes (see Markel, 1998 and his discussion of semiotic psychology), then the current methodology can be useful for assessing the psychological climate of cultures at various time periods. The focus of a seminological approach (from the Greek work *semeion* meaning sign, from Saussure, Bally, & Sechehaye, 1966) would be on learning more about how exactly terms come into lexical usage and the kinds of events (both external and internal) that promote either the creation of new words or the reshaping of older ones. Semiotics would also be interested in understanding the psychological value these new terms carry (e.g., Benjafield, 1983). Such an endeavor may provide new insights into how cultural events shape our understandings of self and others as well as how these new understandings return to impact cultural development.

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